

## Global Tender Notification for Raman-PL

(Tender date: 26<sup>th</sup> May 2025)

This is an RFQ (Request for Quote) for procurement of Raman Spectrometer with PL for the Centre for Nano Science and Engineering (CeNSE) at IISc, Bangalore. CeNSE is a multidisciplinary research department at IISc that houses a 14,000 sq. ft. cleanroom and characterization facility used by more than 100 faculty members from various disciplines at IISc. CeNSE also runs a program called Indian Nano electronics Users Program (INUP) which has allowed 8000 participants and 1500 faculty from more than 700 universities and institutes all over India to use the facilities at CeNSE.

Consequently, any utility/facility at CeNSE receives significant exposure to scientific community at IISc and beyond. The vendors are requested to factor in the value of this exposure into their quotes. Details of existing facilities are available at:

<http://mncf.cense.iisc.ac.in/>

<http://nnfc.cense.iisc.ac.in/>

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# Section 1 - Bid Schedule

1	Tender No	CeNSE/MNCF/01/2025-26
2	Tender Date	26 <sup>th</sup> May 2025
3	Item Description	Supply and installation of Raman-PL
4	Tender Type	Two-bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
5	Place of tender submission	Chairperson Office First Floor Centre for Nano Science and Engineering Indian Institute of Science, Bangalore 560012
6	Last Date & Time for submission of tender	16 <sup>th</sup> June 2025
7	For further clarification	Dr. Suresha S J Room No: GF 12 Centre for Nano Science and Engineering Indian Institute of Science, Bangalore 560012 Email: sureshasj@iisc.ac.in

## Section 2 – Eligibility Criteria

Prequalification criteria:

1. Only the Original Equipment Manufacturer or their authorized representatives shall participate in the bid.
2. The order will be placed only on the bidder who participated in the bid.
3. The Bidder's firm should have existed for a minimum of 3 years. (Enclose Company Registration Certificate)
4. The Bidder should have qualified technical service personnel for the instrument(s) based in India.
5. If the Bidder is a local distributor/dealer/Agent, it is mandatory to attach an authorization certificate along with the technical bid from the original equipment manufacturer.
6. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per Annexure 4.
7. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.

# Section 3 – Terms and Conditions

## A) Submission of Tender:

1. **This order is open to all global Original Equipment Manufacturer (OEM) or their Indian authorized distributor.**
2. Vendors will be required to submit a technical proposal and a commercial proposal in **two separate sealed envelopes**. Quotes in violation of this will be rejected. Please mention **“Tender for Raman-PL”** on the envelopes.
3. All documentation in the tender should be in English.
4. The technical proposal or Technical Bid (Part-A) should have:
  - a. Relevant technical datasheets. The committee reserves the right to cross-check the information in these datasheets with publicly available information.
  - b. A compliance table with 5 columns. The first column must list the technical requirements, in the order that they are given below. The second column should describe the capability of the tool for that specific requirement. Please be quantitative and consistent with the technical datasheets. In case the technical requirement is a text, second column must provide a technical answer. In case the requirement is a number, please provide a number. Third column must specify whether the technical requirement is met with a “Yes”, “No”, or “Partially”. If the response is “Partially” or “No” the third column, the fourth column must explain the extent of the deviation and, if possible, the reasons for the deviation. The fifth column is for other “Remarks”. You can use it to compare your tool with that of your competitors or provide more details/justifications.
  - c. Tender documents without technical compliance documents will not be considered.
  - d. Technical capabilities of any *suggested* accessories/add-ons that may enhance the usability, capability, accuracy or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
  - e. Any additional capabilities or technical details that you would like to bring to the attention of the purchase committee. Vendors are encouraged to highlight the advantages of their tools over comparable tools from competitors
5. Commercial Bid (Part-B) – Indicating item wise price for the items mentioned in the technical bid, **as per the format of quotation provided in tender**, and other commercial terms and conditions.
6. The commercial bid must conform to the following:
  - a. The quotations should be CIP Bangalore (by Air Freight only) with validity of 90 days.
  - b. Mention itemized cost of the system, all components optional items and *required* accessories, such as software, power supply, etc. Provide certificates for the country of origin of manufacturing for each line item. The price of every line item in the commercial bid should be quoted along with the total quoted price for the instrument to be operational (installed and ready to use) in our facility.

- c. Mention itemized cost, as an option, for any *suggested* accessories/add-ons that may enhance the usability, capability, accuracy, or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
  - d. Mention the HSN codes
  - e. Mention the warranty provided with the tool.
    - i. Warranty of 1 year is mandatory. Warranty of 3 years or more is preferred.
    - ii. All electronics and instrumentation must be covered under the warranty. Clearly indicate any part that is not included in the warranty.
    - iii. If parts need to be shipped back to OEM for repair bidder should be responsible for the repair and return
7. If multiple systems fulfil the requirement, vendors can offer multiple bids.
  8. The technical proposal will be evaluated against the technical requirements. Only vendors who meet the technical requirements will be considered for the commercial comparison and negotiation.
  9. The lowest bid L1 will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, selected optional items, recommended spares and warranty.
  10. The decision of the purchase committee on the execution and evaluation of the tender, is absolute and final.
  11. The technical proposal must include references of at least 5 previous installations done in India within last 5 years of similar equipment from the equipment manufacturer. Please provide the names and contact addresses of the referees, so that the committee can contact them independently. Please provide the installation report
  12. We encourage vendors to give technical presentations, physically or online, so that we can better understand the technical capabilities of their tools and vendors can better understand the requirements.
  13. A technical evaluation by the purchase committee may include a demonstration to verify the functionalities and capabilities of the system quoted. The purchase committee reserves the right to reject the bids based on their technical evaluation of the quality of data, capability demonstration, and service. If the data/requested capability demonstration does not happen within a stipulated timeframe, the bid will be rejected. Any discrepancy between the promised specifications and measurements will be deemed as technical non-compliance.
  14. The decision of purchase committee will be final.
  15. All queries are to be addressed to the person identified in "Section 1 – Bid Schedule" of the tender notice.
  16. GST/other taxes, levies etc., are to be indicated separately. The BIDDER should mention GST Registration and PAN in the tender document (Indian Bidders only).
  17. If price is not quoted in Commercial Bid as per the format provided in tender document the bid is liable to be rejected.
  18. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without there by incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.
  19. Incomplete bids will be summarily rejected.

### B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

### C) Validity of the Offer:

The offer shall be valid 90 Days from the date of opening of the commercial bid.

### D) Evaluation of Offer:

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
3. Pre-qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.
4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.
5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
  - a. Non-submission of complete offers.
  - b. Receipt of bids after due date and time and or by email / fax (unless specified otherwise).
  - c. Receipt of bids in open conditions.
6. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall construe that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained.
7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post processing, optional items, recommended spares, warranty, annual maintenance contract.

### E) Pre-requisites:

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

### F) Mode of Shipment:

In case of foreign bidders, the consignment must be airlifted, insured and transported to the Bangalore International Airport (CIP/CIF). Necessary custom clearance will be done by IISc, Bangalore, from Bangalore International Airport.

#### G) Customs clearance:

The IISc, Bangalore will furnish the necessary papers for the import of items into India, necessary custom duty exemption certificate and other supporting documents to facilitate the import of the items will be provided.

#### H) Warranty:

The complete system is to be under a warranty period of a minimum of 3 years (year-wise breakup value should be shown in the commercial bid), including free supply of consumables, spare parts, and data analysis software from the date of functional installation. If the instrument is found to be defective, it has to be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

#### I) Annual Maintenance Contract:

An annual maintenance contract for a period of 2 years post warranty should be provided on completion of warranty period.

#### J) Purchase Order:

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

#### K) Delivery and Installation:

1. The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order.
2. The system should be delivered, installed and made functional within 90 days from the date of receipt of purchase order.
3. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore.
4. After successful installation and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of the warranty period.
5. The bidder should also arrange for technical training to the local facility technologists and users.
6. The bidder should provide onsite application training for the local facility technologists and users.

#### M) Payment Terms:

The payment will be through a Letter of Credit and milestone of the payment will be determined after the mutual discussions with the successful bidder.

#### N) Statutory Variation:

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being

supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed on to IISc, Bangalore.

#### O) Disputes and Jurisdiction:

Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

#### P) General:

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.
3. The bidder may visit the installation site before submission of tender, with prior intimation.
4. All imported equipment should be quoted in the currency of the country of origin, and all locally sourced items should be quoted in Indian Rupees.
5. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

## Section 4 – Technical Specifications

### Technical Specifications of Confocal Raman Spectrometer with PL Capability

#### 1. System Overview

A high-resolution Confocal Micro Raman Spectrometer system with integrated **Photoluminescence (PL)** and **mapping** capabilities. The system must be compatible with **Montana Cryostat (CryoAdvance-50)** and include lasers, detectors, optics, a microscope, software, a workstation, and necessary accessories for complete functionality.

#### 2. Spectrometer

- Spectral Range: **200–2200 nm**
- Spectral Resolution:  **$\leq 0.5 \text{ cm}^{-1}$  (FWHM)**
- Signal-to-noise ratio: **>15:1** for Si 3rd order peak
- Direct laser coupling to the spectrometer (no optical fiber)
- Focal Length:  **$\geq 250 \text{ mm}$**

#### 3. Laser Sources

- **Essential Lasers:**
  - 532 nm diode,  $\geq 50 \text{ mW}$
  - 785 nm diode,  $\geq 100 \text{ mW}$
- **Optional Lasers:**



- 1064nm continuous laser for Raman and PL using InGaAs with necessary filters and optics.
- Quote laser source between 400–500 nm with necessary filters and optics.
- 1064 pulsed laser with necessary filters and optics.

**Requirements:**

- Raman edge filters allowing measurements down to 50  $\text{cm}^{-1}$
- PL filters upto 1600nm for both 532nm and 785nm lasers.
- Laser noise level : < 0.25% or better
- 

#### 4. Detectors

- **CCD Detector (Visible):**
  - 1024×256 pixels, 26  $\mu\text{m} \times 26 \mu\text{m}$  or better
  - Cooled to  $-70^\circ\text{C}$
  - QE > 40%
  - Range: 200–1050 nm or better
- **InGaAs Detector (NIR, Optional):**
  - 512×1 pixels, 25×500  $\mu\text{m}$  or better
  - Air-cooled to  $\leq -60^\circ\text{C}$  or better
  - QE > 80% in 1–1.5  $\mu\text{m}$
  - Range: 800–1600 nm or better

#### 5. Gratings

- 830, 1200, 1800, 3000, 3600 grooves/mm
- At least two gratings must be motorized and user-swappable
- Single scan support across entire Raman range without stitching

#### 6. Microscope

- High-stability research-grade binocular microscope
- Objectives: 5x, 10x, 20x, 50x, 100x and 50x Long Working Distance
- Laser spot size:  $\leq 1.5 \mu\text{m}$
- Lateral resolution < 1  $\mu\text{m}$ , axial < 2  $\mu\text{m}$
- High-resolution color video camera ( $\geq 8 \text{ MP}$ )
- Real-time dynamic autofocus
- Visible laser spot centered in camera view
- Auto alignment and power optimization
- Auto switching and beam alignment through beam expander
- Built-in calibration (Si and Neon lamp)
- Motorized switch between video and Raman modes

#### 7. Mapping Stage

- Fully motorized XYZ stage with joystick and software control
- Travel: X = 112 mm, Y = 75 mm, Z = 25 mm
- Step Size:  $\leq 50 \text{ nm}$  (X, Y),  $\leq 8 \text{ nm}$  (Z)
- High resolution fast mapping with spatial resolution  $\leq 300\text{nm}$
- Mapping speed: Up to 1000 spectra/s
- Supports 3D Raman mapping and confocal depth profiling

#### 8. Software

- Unified control, acquisition, and analysis suite
- Features:
  - Baseline subtraction
  - Peak fitting
  - 3D visualization and mapping
  - Advanced chemometric analysis
  - White light image capture
  - Export to MATLAB
- Includes **5 offline analysis licenses**
- Database for materials (minerals, polymers, inorganics)

## 9. Workstation

- Intel Core i7, 8 GB RAM, 1 TB SSD or better
- Graphics card, DVD-RW
- 27" LED monitor

## 10. Advanced Capabilities

- **Confocal Raman measurements**
- **Photoluminescence (PL) mode**

## 11. Optional Items

- **Polarization-resolved Raman**
  - Half-waveplates and quarter waveplate for all quoted lasers should be quoted as optional items for linear and circular polarization measurements
- **$g^2$  (second-order correlation) measurement capability should be quoted as optional item**
- Please quote Ultralow frequency filters allowing measurements down to  $10\text{ cm}^{-1}$  for both 532 and 785 nm as
- **Sample tilt/rotation stage** (optional)
- **Pressure cell attachment** (optional)
- Vibration-isolated Optical table
- Photon up-conversion measurement: mention possible add-on user defined filters in the emission path

## 12. Cryostat Integration

- Full integration with Montana Cryostat (S50)
- Extendable sampling arm for cryostat use
- Must support PL and Raman mapping at cryogenic temperatures

## 13. Acceptance Criteria

- All the above-mentioned technical specifications must be demonstrated on-site for acceptance.
- Sensitivity: S/N Ratio for 3<sup>rd</sup> order Si peak: 15:1
- Spectral Resolution:  $0.5\text{ cm}^{-1}$  for Ne light source
- CCD Detector (Visible): Range: 200–1050 nm
- InGaAs Detector (NIR, Optional): Range: 800–1600 nm
- Laser noise level:  $< 0.25\%$
- Spectral Reproducibility:  $0.1\text{ cm}^{-1}$  over 40 spectra

- Demonstration of laser spot positioning and mapping within the cryostat is required
- Mapping and stage control:  $X, Y \leq 50 \text{ nm}$ ;  $Z \leq 8 \text{ nm}$ , Spatial Resolution,  $\leq 300 \text{ nm}$
- The system must be compatible with Montana Cryostat (CryoAdvance-50) and must demonstrate PL and Raman mapping at cryogenic temperatures

# Section 5- Technical Bid

The technical bid should furnish all requirements of the tender along with all annexure in this section and submitted to

The Chaiperson,  
Attn: Dr. Suresha S J (MNCF)  
Centre for Nano Science and Engineering  
Indian Institute of Science  
Bangalore – 560012, India

## Annexure-1:

### Details of the Bidder

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

### Details of the Bidder

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name  
Designation, Seal

Date:

## Annexure-2:

Declaration regarding experience

To,  
The Chairperson,  
Centre for Nanoscience and Engineering,  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXX

Dated: XXXXX

Supply and installation of Raman-PL

Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has ---- years of experience in supplying and installing Raman-PL System.

(Signature of the Bidder)

Printed Name

Designation, Seal Date:

### Annexure-3:

#### Declaration regarding track record

To,  
The Chairperson,  
Centre for Nano Science and Engineering  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXXXX

Dated: XXXXX

Supply and installation of Raman-PL

Sir,

I've carefully gone through the Terms & Conditions contained in the above-referred tender. I hereby declare that my company/ firm is not currently debarred / blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following

Sl.No	Country in which the company is Debarred /blacklisted / case is Pending	Blacklisted / debarred by Government / Semi Government/Organizations /Institutions	Reason	Since when and for how long

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully  
(Signature of the Bidder)

Name  
Designation, Seal  
Date:

## Annexure – 4:

Declaration for acceptance of terms and conditions

To,  
The Chairperson,  
Centre for Nano Science and Engineering  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXX  
Dated: XXXX

Supply and installation of Raman-PL

Sir,

I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name

Designation, Seal

Date:



## Annexure – 5:

### Details of items quoted:

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks

### Instructions to bidders:

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

## Section 6 – Commercial Bid

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the technical specification				
1.a	... (details of essential items)				
1.b	...				
2.	Optional items noted in the technical specification				
2.a	... (details of essential items)				
2.b	...				
3.	Accessories for operation and installation				
4.	All Consumables, spares and software to be supplied locally				
5.	Warranty (3 years)				
6.	AMC 2 years beyond warranty				
7.	Cost of Insurance and Airfreight				
8.	CIP/CIF IISc, Bengaluru				

Any additional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total

Addressed to

The Chairperson,  
Attn: Dr. Suresha S J (MNCF)  
Centre for Nano Science and Engineering  
Indian Institute of Science  
Bangalore – 560012, India

# Section 7 – Checklist

(This should be enclosed with technical bid- Part A)

The following items must be checked before the Bid is submitted:

## 1. Sealed Envelope “A”: Technical Bid

1. Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:
  - a. Annexure 1: Bidders details
  - b. Annexure 2: Declaration regarding experience
  - c. Annexure 3: Declaration regarding clean track record
  - d. Annexure 4: Declaration for acceptance of terms and conditions
  - e. Annexure 5: Details of items quoted
2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

## 2. Sealed Envelop “B”: Commercial Bid

### Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.